

## Patent Abstracts of Japan

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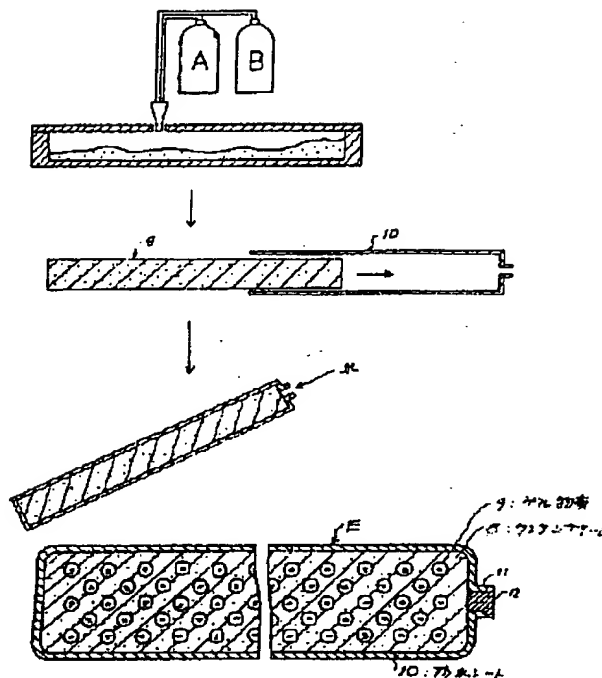
APPLICATION DATE : 16-07-90  
APPLICATION NUMBER : 02187507

APPLICANT : FRANCE BED CO LTD;

INVENTOR : KAWAMURA SHOJI;

INT.CL. : A47C 27/00 A47C 17/02 A61G 7/05  
B32B 5/18 B32B 27/00 B32B 27/18  
B32B 27/40

TITLE : CUSHION AND MANUFACTURE  
THEREOF



*might be used as a water mattress or a pad, and is also waterproof by a method wherein a foamed elastic member made of foamed polyurethane foam and gel substance contained in the foamed elastic member and consisting of water-absorbing resin and water absorbed in the resin are wrapped by a bag-shaped waterproof sheet.*

ABSTRACT : PURPOSE: To provide a cushion which is thin, light weight and formable in any shape, and has the same feeling as a water mattress or a pad, and is also waterproof by a method wherein a foamed elastic member made of foamed polyurethane foam and gel substance contained in the foamed elastic member and consisting of water-absorbing resin and water absorbed in the resin are wrapped by a bag-shaped waterproof sheet.

CONSTITUTION: Foaming of foamed polyurethane foam is obtained by mixing polyol solution and isocyanate solution which are urethane stock solutions. Powder of water absorbing resin is preliminarily contained in the isocyanate solution. The stock solution obtained by mixing the both solutions is poured into a die. After foaming, a molding is put into a bag-shaped waterproof sheet 10. Then water is supplied into the waterproof sheet 10, which is sealed on the periphery after that. Gel substance 9 has elasticity and repulsion, and both the elasticity and repulsion exist within an urethane foam 8. On the other hand, the gel itself is like pudding, and therefore, existence of a number of the gel substances 9 in a cushion give a feeling similar to water to a user who lies on the cushion.

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Information for supplemental IDS in re U.S. Application 09/726,075 filed Nov 29, 2000

Your Ref.: 64251-006

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The European Patent Office cited the following References during Examination:

D1 Patent Abstracts of Japan, Appl. No. 02187507, S. Kawamura:  
"Cushion and Manufacture thereof";

D2 AU 199929072B2, R. A. Crosbie

(D1)

Kawamura discloses a cushion or a mattress with a similar feeling to a water mattress. The cushion is made of a polyurethane foam having incorporated therein a powder of a water absorbing resin. After foaming, the product is put into a bag-shaped waterproof sheet and water is supplied to the foam with the water absorbing resin. Hereby the resin is converted to a hydrogel. The effect is that of "trapping water" in a foam mattress or cushion. The hydrogel used in D1 is not comparable to the gel used with the invention.

(D2)

Crosbie discloses a seat member including a forward supporting cushion and an adjacent rear supporting cushion, both of which can be formed of polyurethane foam and mounted on a base member. The seat members may be covered by a top layer of polyurethane foam and/or a layer of gel material, such as a hydrogel or viscoelastic polyurethane gel. The top layer (cover layer) is a protective outer layer that is separately placed on the cushion like or instead of a textile fabric conventionally used for seat members. The top layer is not produced within a composite molding like with the invention. The gel is not specified and will thus not have the inherent adhesive properties utilized with the invention.